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Renewed interest in the inverted barometer effect has been spurred by altimetry, specifically, the accuracy of measurements of TOPEX/Poseidon. The change in SSH associated with this effect produces anomalous oceanographic features. It is therefore desirable to remove this signal.

Currently, only one component of the inverted barometer is understood, the static response. The total effect was studied through implementation of a barotropic model. A region in the North Pacific with a February/March '93 time period was selected as an appropriate test area. The issue was addressed with model runs driven by 6-hourly FNOC wind and pressure fields to examine both the static and dynamic elements of the inverted barometric response.

The model, which runs with a resolution of 0.5° , incorporates real bathymetry, and includes the marginal seas and shelf regions. Identical twin methodology was used to separate out the influence of atmospheric forcing. Three runs were made: one incorporating atmospheric pressure, one using winds, and the last employing both. The SSH difference between the last two runs and the static inverse barometer are used to estimate the dynamic component of the inverse barometer. Currently, a simulated TOPEX/Poseidon altimeter is being flown over the model domain to compare with the altimeter data directly.

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